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10/709,581	05/14/2004	Tetsunori ADACHI	2006579-0129 (CTX-086)	3580
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CHOATE, HALL & STEWART / CITRIX SYSTEMS, INC. TWO INTERNATIONAL PLACE BOSTON, MA 02110				MAI, KEVIN S
			ART UNIT	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/709,581	ADACHI, TETSUNORI	
	<b>Examiner</b>	<b>Art Unit</b>	
	KEVIN S. MAI	2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 13 October 2009.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 20-24,26-37,55 and 56 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 20-24,26-37,55 and 56 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

### **DETAILED ACTION**

1. This Office Action has been issued in response to Applicant's Amendment filed October 13, 2009.
2. Claims 20 and 26 have been amended. Claims 20-24, 26-37, 55 and 56 have been examined and are pending.

#### ***Response to Arguments***

3. Applicant's arguments filed October 13, 2009 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Objections***

4. In view of the amendments made the pending claim objections have been withdrawn.

#### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 20-24, 26-37, 55 and 56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

7. Claim 20 recites the limitation “receiving, by the proxy server, a request for a static image representing current application output data generated by the application, the request transmitted one of either periodically, and upon determining a predetermined percentage of the virtual screen buffer changed state”. However the specification does not support the request being sent to the proxy server upon determining a predetermined percentage of the virtual screen buffer changed state. The specification does support in paragraph [0044], "Alternatively, the proxy server application 158 may transmit an update to the client application 146 when the proxy server application 158 determines that a predetermined percentage of the virtual screen memory area has changed state or whenever a request for the current state of the graphical application output is received by the proxy server application". As can be seen the specification supports the proxy server sending the screen updates in response to this criteria but it does not support a request being sent to the proxy in response to this criteria.

8. Claim 26 recites “further comprising applying lossy image compression to the application data prior to generating the static image”. However the portion concerning “prior to generating the static image” is not supported by the specification. Paragraph [0049] discloses “That is, the proxy server application 158 uses a lossy compression algorithm, such as JPEG, to encode the screen image before transmission”. Thus, it is seen that the applying lossy image compression to the application data is in fact the generation of the static image. As such, the application of the lossy compression does not occur prior to generating the static image.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 20-23 and 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pub. No. 2001/0047406 to Araujo et al. (hereinafter “Araujo”) and further in view of US Pub. No. 2005/0186913 to Varanda (hereinafter “Varanda”).

12. **As to Claim 20**, Araujo discloses **a method for displaying at a mobile client device, output produced by an application program executing on a server, the method comprising:**  
**(a) receiving, by a thin-client program executing on a proxy server, application output data generated by an application executing on an application server;** (Paragraph [0120] of Araujo discloses the SEP (proxy server) uses a thin-client application module to obtain graphical output displays, as screen shots (application output data), generated by the client application program on

the application server. Figure 4 discloses the thin-client application being in the virtual office software and the virtual office software is shown in figures 2, 3A, and 3B to be in the SEP);

**[(b) writing, by the thin-client program executing on the proxy server, the received application output data to a virtual screen buffer maintained in a memory element on the proxy server]**

**[(c) receiving, by the proxy server, a request for a static image representing current application output data generated by the application, the request transmitted one of either periodically, and upon determining a predetermined percentage of the virtual screen buffer changed state];**

**[(d) generating, by the proxy server responsive to receiving the request, a static image from at least a portion of the application output data stored in the virtual screen buffer]**

**(e) transmitting to the mobile client device, by the proxy server, the static image** (Paragraph [0120] of Araujo discloses a module in the SEP obtaining graphical output displays, as screen shots, generated by the client application program and sends them to the user browser for rendering thereat).

Araujo does not explicitly disclose **(b) writing, by the thin-client program executing on the proxy server, the received application output data to a virtual screen buffer maintained in a memory element on the proxy server.**

However, it would have been obvious to do so in view of Araujo's disclosure. Paragraph [0120] of Araujo discloses the thin-client module obtains graphical output displays and converts them from one format into another. In order to convert the data it is seen that the original graphical output displays would at least need to be temporarily stored in memory so that it could

be processed. Thus this memory would be the same as the virtual frame buffer. Such a feature would have been obvious to one of ordinary skill in the art in view of Araujo because storing data that processing must be performed on is well known in the art.

Araujo does not explicitly disclose **(c) receiving, by the proxy server, a request for a static image representing current application output data generated by the application, the request transmitted one of either periodically, and upon determining a predetermined percentage of the virtual screen buffer changed state**

However, Varanda discloses this. Paragraph [0028]-[0029] of Varanda disclose software on the client machine requests and update of the screen of the wireless data device periodically and that the screen update request is sent to the server machine in communication with the wireless data device. Paragraphs [0034]-[0037] disclose a client may request that the LCD display inform the client when the LCD display changes, then in response to this request the wireless device will wait for the LCD screen to change.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the remote access system as disclosed by Araujo, with methods of acquiring updated screen information as disclosed by Varanda. One of ordinary skill in the art would have been motivated to combine to use a known technique to improve similar devices in the same way.

Araujo does not explicitly disclose **(d) generating, by the proxy server responsive to receiving the request, a static image from at least a portion of the application output data stored in the virtual screen buffer.**

Araujo discloses generating the image (Paragraph [0120] of Araujo discloses converting the graphical output displays from one format into another format containing the screen shots.

Accordingly an image (the newly converted format) was generated from at least a portion of the application output data (the original graphical output displays)). However, Araujo does not explicitly disclose the data being stored in the frame buffer. But this feature would have been obvious for the same rationale supplied above.

13. **As to Claim 21**, Araujo-Varanda discloses the invention as claimed as described in claim 20 **further comprising formatting, by an application server, the application data into at least a first message in a presentation protocol format** (Paragraph [0120] of Araujo discloses a module in the SEP obtaining graphical output displays generated by the client application program in RDP form. RDP is known to be a presentation protocol).

14. **As to Claim 22**, Araujo-Varanda discloses the invention as claimed as described in claim 20 **further comprising formatting, by an application server, the application data into at least a first message in Independent Computing Architecture (ICA) protocol format** (Paragraph [0120] of Araujo discloses a module in the SEP obtaining graphical output displays generated by the client application program in RDP form. Then paragraph [0019] discloses using RDP instead of the ICA protocol, thus showing that using the ICA protocol is interchangeable with using RDP).

15. **As to Claim 23**, Araujo-Varanda discloses the invention as claimed as described in claim 20 **further comprising formatting, by an application server, the application data into at a first message in Remote Display Protocol (RDP) format** (Paragraph [0120] of Araujo

discloses a module in the SEP obtaining graphical output displays generated by the client application program in RDP form).

16. **As to Claim 31**, Araujo-Varanda discloses the invention as claimed as described in claim 20 **wherein transmitting further comprises transmitting to the mobile client device via Hyper Text Transfer Protocol (HTTP), by the proxy server, the static image** (Paragraph [0117] of Araujo discloses accepting output information, such as a screen shot, from an application and converting it into a graphical HTML page in a secure HTTP response to be rendered in the users browser).

17. **As to Claim 32**, Araujo-Varanda discloses the invention as claimed as described in claim 20 **further comprising receiving, by the proxy server, data representing input from the mobile client device** (Paragraph [0084] of Araujo discloses transferring user keystrokes and mouse clicks on the remote PC to the SEP).

18. **As to Claim 33**, Araujo-Varanda discloses the invention as claimed as described in claim 32 **further comprising transmitting, by the proxy server, the received mobile client device input data to the application server** (Paragraph [0084] of Araujo discloses transferring user keystrokes and mouse clicks on the remote PC to the SEP, which then relays that user interaction data to the application server).

19. **As to Claim 34,** Araujo-Varanda discloses the invention as claimed as described in claim 20 **further comprising receiving, by the proxy server, data from an application execution server representing a change in the static image displayed on the mobile client device screen** (Paragraph [0166] of Araujo discloses the process of the application server providing the initial graphical display screen and then discloses subsequent server-initiated interactions, i.e., bit-map display screens, for this program will be provided by the client application server and processed through the thin-client front end (located on the SEP) and then provided to the users browser to appropriately update the display in the corresponding application window).

20. **As to Claim 35,** Araujo-Varanda discloses the invention as claimed as described in claim 34 **further comprising transmitting to the mobile client device, by the proxy server, static image data representing the changed portion of the static image screen** (Paragraph [0166] of Araujo discloses the process of the application server providing the initial graphical display screen and then discloses subsequent server-initiated interactions, i.e., bit-map display screens, for this program will be provided by the client application server and processed through the thin-client front end (located on the SEP) and then provided to the users browser to appropriately update the display in the corresponding application window).

21. **As to Claim 36,** Araujo-Varanda discloses the invention as claimed as described in claim 35 **wherein transmitting further comprises transmitting the static image data after a predetermined period of time has elapsed** (Paragraph [0166] of Araujo discloses that subsequent server-initiated interactions, i.e., bitmap display screens, will be provided by the

application server. This is seen as the server initiating updated image transmission periodically or after a predetermined period).

22. **As to Claim 37**, Araujo-Varanda discloses the invention as claimed as described in claim 20 **further comprising transmitting, by the mobile client device, a request for updated static image information** (Figure 13 of Araujo discloses an HTTP\_GET\_REQ (1310) that results in a Display\_Screen (1360) being sent to it).

23. Claims 26, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araujo-Varanda and further in view of US Pub. No. 2002/0091738 to Rohrabaugh et al. (hereinafter “Rohrabaugh”).

24. **As to Claim 26**, Araujo-Varanda discloses the invention as claimed as described in claim 20. Araujo-Varanda does not explicitly disclose **further comprising applying lossy image compression to the application data prior to generating the static image** (Paragraph [0166] of Araujo discloses messages sent containing screen bitmap display data).

However, Rohrabaugh discloses this (Paragraph [0055] of Rohrabaugh discloses that graphic file formats typically used for internet content include bitmap files, GIF files and JPEG files. Thus since it would be obvious to use bitmap files or JPEG's interchangeably, since they are both well known formats, it would then be obvious to apply JPEG compression to the data which is inherently lossy)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of claim 20 as disclosed by Araujo-Varanda, with using the JPEG format for the image data as disclosed by Rohrabaugh. One of ordinary skill in the art at the time the invention was made would have been motivated to combine to provide the image in a graphic format that is well-known (paragraph [0055] of Rohrabaugh). Since Araujo already discloses using bitmaps it would be obvious to interchange it with other well-known graphic formats. Then it would also be obvious to apply JPEG compression in order to obtain the JPEG images.

25. **As to Claim 29**, Araujo-Varanda discloses the invention as claimed as described in claim 20. Araujo-Varanda does not explicitly disclose **wherein transmitting further comprises transmitting to the mobile client device, by the proxy server, GIF image data representing the static image** (Paragraph [0166] of Araujo discloses messages sent containing screen bitmap display data).

However, Rohrabaugh discloses this (Paragraph [0055] of Rohrabaugh discloses that graphic file formats typically used for internet content include bitmap files, GIF files and JPEG files)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of claim 20 as disclosed by Araujo-Varanda, with using the GIF format for the image data as disclosed by Rohrabaugh. One of ordinary skill in the art at the time the invention was made would have been motivated to combine to provide the image in a graphic format that is well-known (paragraph [0055] of Rohrabaugh). Since Araujo already

discloses using bitmaps it would be obvious to interchange it with other well-known graphic formats.

26. **As to Claim 30**, Araujo-Varanda discloses the invention as claimed as described in claim 20. Araujo-Varanda does not explicitly disclose **wherein transmitting further comprises transmitting to the mobile client device, by the proxy server, JPEG image data representing the static image** (Paragraph [0166] of Araujo discloses messages sent containing screen bitmap display data).

However, Rohrbaugh discloses this (Paragraph [0055] of Rohrbaugh discloses that graphic file formats typically used for internet content include bitmap files, GIF files and JPEG files)

Examiner recites the same rationale to combine used in claim 26.

27. Claims 55 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araujo-Varanda and further in view of US Patent 5983247 to Yamanaka et al. (hereinafter "Yamanaka").

28. **As to Claim 55**, Araujo-Varanda discloses the invention as claimed as described in claim 20. Araujo-Varanda does not explicitly disclose **further comprising determining, by the proxy server, an acceptable amount of image loss based in part on a screen included on the mobile client device**.

However, Yamanaka discloses this (Column 35 lines 4-12 of Yamanaka disclose the image generating unit judges whether the whole of an image can be displayed on the screen and if it is judged not to be able to the image generating unit will determine a compression rate so that the whole of the image can be displayed on the screen. Thus the acceptable amount of image loss was determined according to making the image fit on the screen)

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the method of claim 20 as disclosed by Araujo-Varanda, with compressing images according to the screen on the client device as disclosed by Yamanaka. One of ordinary skill in the art would have been motivated to combine to make it possible for an image with a size exceeding that of the screen of the displaying unit to be displayed (column 36 lines 20-25 of Yamanaka).

29. **As to Claim 56**, Araujo-Varanda-Yamanaka discloses the invention as claimed as described in claim 55 **further comprising compressing, by the proxy server, the static image according to the determined amount of image loss** (Column 35 lines 4-12 of Yamanaka disclose the image generating unit judges whether the whole of an image can be displayed on the screen and if it is judged not to be able to the image generating unit will determine a compression rate so that the whole of the image can be displayed on the screen. Then the image generating unit will compress the image with the determined compression rate).

Examiner recites the same rationale to combine used in claim 55.

30. Claims 24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Araujo-Varanda-Rohrabaugh and further in view of US Pub. No. 2003/0055327 to Shaw et al. (hereinafter “Shaw”).

31. **As to Claim 24**, Araujo-Varanda-Rohrabaugh discloses the invention as claimed as described in claim 26. Araujo-Varanda-Rohrabaugh does not explicitly disclose **further comprising modifying the application data prior to compression**.

However, Shaw discloses this (Paragraph [0178] of Shaw discloses the image can be modified by adjusting color quality in order to improve the compression ratio. Accordingly since the color quality was adjusted to improve the compression ratio the modifying occurred prior to compression)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of claim 26 as disclosed by Araujo-Varanda-Rohrabaugh, with modifying the color depth of the data as disclosed by Shaw. One of ordinary skill in the art at the time the invention was made would have been motivated to combine in order to improve the compression ratio due to the increase in runs of the same color (Paragraph [0178] of Shaw).

32. **As to Claim 27**, Araujo-Varanda-Rohrabaugh-Shaw discloses the invention as claimed as described in claim 24 **wherein modifying the application data further comprises changing the color depth of the data received from the application server** (Paragraph [0191] of Shaw discloses a color quality feature where a quality level is applied to a set of image data to reduce

the number of initial number of possible colors to a smaller number of possible colors. This is seen to be modifying the color depth of the data).

Examiner recites the same rationale to combine used in claim 24.

33. **As to Claim 28**, Araujo-Varanda-Rohrabaugh-Shaw discloses the invention as claimed as described in claim 24 **wherein modifying the application data further comprises scaling the data received from the application server** (Paragraph [0033] of Rohrabaugh discloses modifying the content to allow it to be scaled).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to scale the data as disclosed by Rohrabaugh. One of ordinary skill in the art at the time the invention was made would have been motivated to combine to create resolution independent vector displays of Internet content to allow it to be scaled larger and smaller for better viewing or to fit any resolution or screen size (Paragraph [0033] of Rohrabaugh).

### *Conclusion*

34. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN S. MAI whose telephone number is (571)270-5001. The examiner can normally be reached on Monday through Friday 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. S. M./

Examiner, Art Unit 2456

/Rupal D. Dharia/

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Supervisory Patent Examiner, Art Unit 2400